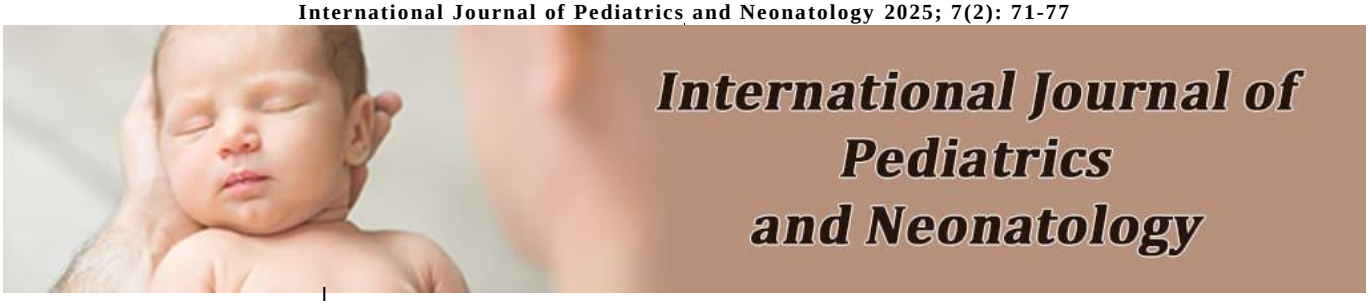

ISSN Print: 2664-8350
ISSN Online: 2664-8369
Impact Factor: RJIF 6.02
IJPN 2025; 7(2): 71-77
www.pediatricsjournal.net
Received: 08-06-2025
Accepted: 12-07-2025

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Understanding parental perspectives on dengue: Knowledge, attitudes, and practices in the context of Paediatric hospitalization

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DOI: https://www.doi.org/10.33545/26648350.2025.v7.i2b.148

Abstract
Background: Dengue fever remains a significant public health challenge in tropical and subtropical regions. Despite various governmental and community-level control efforts, household-level knowledge, attitudes, and practices (KAP) remain crucial for effective dengue prevention, particularly among caregivers of affected children. This study aimed to assess the knowledge, attitudes, and practices regarding dengue fever among parents of children admitted with dengue infection and to evaluate the effectiveness of structured educational intervention in improving these parameters.
Methods: A hospital-based cross-sectional study was conducted among parents of pediatric dengue patients at a tertiary care center. A pre-tested, semi-structured questionnaire assessed baseline KAP. Following this, a targeted educational session was provided, and KAP was reassessed after a fixed period. Associations between KAP scores and sociodemographic variables were analyzed using appropriate statistical methods. Multivariable logistic regression identified independent predictors of knowledge adequacy.
Results: Out of the total participants, 45% demonstrated adequate knowledge, 77.5% had positive attitudes, and 61.7% showed adequate preventive practices at baseline. Female gender, higher education, and professional occupation were significantly associated with knowledge adequacy. Educational intervention led to a marked improvement in KAP scores-adequate knowledge rose from 45% to 82.5%, positive attitudes from 69.2% to 88.3%, and adequate practices from 36.7% to 79.2%. Statistically significant positive correlations were found among all three KAP domains.
Conclusion: While attitudes toward dengue fever were generally favorable, knowledge and preventive practices were suboptimal at baseline. Structured health education significantly improved all KAP domains. Targeted, demographically sensitive interventions are essential to strengthen community-based dengue prevention strategies.

Keywords: Dengue, health knowledge attitudes practice, health education, parents, Pediatrics, disease prevention, vector control, cross-sectional studies, risk factors

Introduction
Dengue fever is a rapidly spreading mosquito-borne viral disease that poses a serious public health threat in tropical and subtropical regions, including India. Transmitted primarily by the *Aedes aegypti* mosquito, dengue infection ranges in severity from self-limiting febrile illness to life-threatening complications such as dengue hemorrhagic fever and dengue shock syndrome [1, 2]. According to the World Health Organization, the global incidence of dengue has grown dramatically in recent decades, with children often bearing a disproportionate share of disease burden. In India, seasonal dengue outbreaks are common, particularly during the monsoon and post-monsoon months, and have led to increasing rates of hospitalization among children [3].

Despite the recurrent nature of dengue epidemics and the availability of simple preventive measures, widespread misconceptions, inadequate awareness, and inconsistent practices contribute to the persistence and spread of the disease. Parental knowledge, attitude, and practices (KAP) play a crucial role in the early recognition, care-seeking behavior, and prevention of dengue fever among children. Parents are often the primary caregivers responsible for implementing household-level control measures and ensuring timely medical attention for febrile illnesses in children [4-6].

Therefore, understanding their level of awareness and behavior toward dengue prevention is essential for designing effective, community-based health education interventions.

While several studies have examined KAP levels in the general population, few have specifically focused on parents of children hospitalized for dengue fever [4-11]. This subpopulation is uniquely positioned, having had direct experience with the disease, which may influence their perceptions and practices differently compared to the general public. Assessing their KAP provides valuable insights into both the barriers and opportunities for dengue prevention at the household level, especially in semi-urban and urban settings.

The present study was conducted to assess the knowledge, attitudes, and practices related to dengue fever among parents of children hospitalized with dengue infection at Saptagiri Institute of Medical Sciences, Bangalore. The specific objectives of the study were to determine the proportion of parents with adequate knowledge, positive attitudes, and appropriate preventive practices regarding dengue, to evaluate the relationships among these KAP components, and to identify sociodemographic factors associated with knowledge adequacy.

Materials and Methods

A descriptive cross-sectional study was conducted in the Department of Pediatrics at Saptagiri Institute of Medical Sciences and Research Centre, Bengaluru, India, between May 2024 and October 2024. The hospital caters to a mixed population comprising urban, semi-urban, and rural communities. The study targeted parents of children aged 0 to 12 years who were admitted for dengue fever in the pediatric wards and pediatric intensive care unit. A total of 120 respondents were included based on feasibility and relevance to previous studies. Participants were enrolled through purposive sampling. Parents were eligible if they were primary caregivers of admitted children with confirmed or suspected dengue fever and consented to participate. Those who had previously attended dengue-related training or were unable to understand Kannada or English were excluded.

A structured and pretested questionnaire was used to assess knowledge, attitudes, and practices (KAP) regarding dengue fever. The tool was developed based on WHO guidelines and adapted from previously validated instruments used in India, Grenada, Brazil, and Egypt []. The questionnaire was reviewed by subject experts in pediatrics and public health. It was available in both English and Kannada and pilot-tested among 10 participants to ensure clarity. The final questionnaire consisted of four sections: sociodemographic characteristics, knowledge (11 multiple-choice questions), attitude (7 items on a 4-point Likert scale), and practice (10 items on a 5-point frequency scale). Each correct knowledge response was scored as 1, with a maximum possible score of 11. Attitude responses were scored from 1 (strongly disagree) to 4 (strongly agree), with a total possible score of 28. Practice items were scored from 0 (never) to 4 (always), with a maximum total of 40. For all three domains, a score ≥60% of the maximum was considered adequate or positive.

The questionnaire was administered through face-to-face interviews conducted by trained data collectors in the participant's preferred language. Interviews took approximately 20-30 minutes per respondent. Written informed consent was obtained from all participants prior to enrollment, and the study was approved by the Institutional Ethics Committee of Saptagiri Institute of Medical Sciences and Research Centre. Data confidentiality and voluntary participation were ensured throughout.

Data were entered and cleaned using Microsoft Excel and analyzed using SPSS Version 25. Descriptive statistics were used to summarize sociodemographic data and KAP scores. Bivariate analysis was conducted using Chi-square tests, and multivariable logistic regression was used to determine predictors of adequate knowledge. Results were reported using adjusted odds ratios (AOR) with 95% confidence intervals. Pearson correlation coefficients were used to examine relationships between knowledge, attitude, and practice domains. A p-value of <0.05 was considered statistically significant.

Results

A total of 120 parents participated in the study, with a slight majority being mothers (53.3%) compared to fathers (46.7%) as shown in Table 1. Most respondents (59.2%) were aged between 26 and 35 years. Educational attainment varied, with 35.9% having completed undergraduate studies, and 5.8% reporting no formal education. Approximately one-third were unemployed (32.5%), while 38.3% were employed in semi-skilled or skilled occupations. The largest proportion of respondents resided in urban areas (46.7%), followed by semi-urban (30%) and rural (23.3%) regions.

Regarding knowledge related to dengue, 81.7% correctly identified that dengue is caused by a virus, and 87.5% recognized fever as a primary symptom. However, awareness of vector-specific details was poor-only 30% correctly identified *Aedes* mosquitoes as the vector, and just 23.3% knew they bite during the daytime. Furthermore, only 34.2% knew that there is no specific antiviral cure for dengue (Table 2). Overall, 54 respondents (45.0%) demonstrated adequate knowledge (≥60% score), with a mean score of 6.2±2.1 out of 11 (Table 5).

Attitude assessment showed that 88.3% of participants agreed or strongly agreed that dengue is a serious illness, and 93.3% felt consulting a doctor was necessary if dengue is suspected (Table 3). Furthermore, 84.2% believed that dengue is preventable, and 81.7% agreed that every household has a role to play in dengue control. Based on the scoring system, 93 respondents (77.5%) had a positive attitude (≥60% score), with a mean score of 21.4±3.2.

In terms of prevention-related practices, 63.3% of respondents used mosquito repellents regularly, while only 24.2% reported consistent use of bed nets. Covering stored water containers and removing stagnant water were reported by 53.3% and 59.2% of participants, respectively. A majority (85%) reported seeking medical attention early in cases of fever (Table 4). Adequate preventive practices were observed in 61.7% of the sample, with a mean practice score of 26.1±5.5 out of 40 (Table 5).

Significant but modest positive correlations were observed between knowledge, attitude, and practice domains. The strongest correlation was between knowledge and attitude ($r = 0.38$, $p<0.001$), followed by attitude and practice ($r = 0.33$, $p<0.001$), and knowledge and practice ($r = 0.27$, $p = 0.003$), as summarized in Table 6. Multivariable logistic regression revealed that female gender (AOR = 2.21; 95% CI: 1.10-4.45; $p = 0.026$), higher education (AOR = 2.73; 95% CI: 1.29-5.78; $p = 0.008$), and skilled/professional

occupation (AOR = 1.91; 95% CI: 1.02-3.56; p = 0.043) were significantly associated with adequate knowledge (Table 7). Age over 30 years and urban residence showed positive trends but were not statistically significant.

Discussion

Dengue fever continues to be a pressing public health concern in many parts of India, including urban and semi-urban regions like Bangalore. Understanding community-level knowledge, attitudes, and practices (KAP) is essential for designing effective prevention strategies, particularly among parents of pediatric patients who represent a critical stakeholder group in vector control and early treatment-seeking behavior.

Sociodemographic Profile

This study assessed the knowledge, attitudes, and practices (KAP) regarding dengue fever among parents of children admitted with dengue infection. A near-equal gender distribution was observed, with a slight predominance of females (53.3%). Most participants were aged between 26 and 35 years, and a substantial proportion (35.9%) had attained undergraduate or higher qualifications. Nearly half of the participants were urban residents, reflecting a moderately urbanized and literate population, potentially influencing their awareness and behavior toward dengue prevention.

Findings from several previous studies align closely with our results. In studies by Anbarasi S *et al.* [4], Haniff S *et al.* [5], and Zhang Y *et al.* [6], the majority of participants were females within a similar reproductive age group (26-35 years), and a large proportion had completed secondary or higher education. Likewise, Mondal R *et al.* [7] and Mohamed Ahmed Ayed M *et al.* [8] reported female predominance and a high proportion of caregivers with basic to moderate educational levels, echoing our study population's characteristics. These similarities highlight the consistent involvement of young, educated mothers in child healthcare decisions, particularly in dengue-endemic areas. In Srinivasa S *et al.* [9], though gender was evenly split, a notable portion had completed primary or higher education, and homemaking was common—further reinforcing the sociodemographic consistency with our findings.

In contrast, studies by Venkatesan B *et al.* [10] and Hamed M *et al.* [11] presented differing demographic profiles. Venkatesan B *et al.* [10] reported a predominantly rural sample (89.5%) with a higher proportion of males and participants over 30 years of age. Similarly, Hamed M *et al.* [11]. Found male predominance (60.7%) and a younger adult cohort primarily from the Makkah province, with employment more concentrated in non-health sectors. These contrasting demographics may contribute to differing patterns in awareness, preventive practices, and responsiveness to health education campaigns compared to the present study.

Knowledge Regarding Dengue Fever

In the present study, knowledge regarding dengue fever was found to be moderate, with only 45% of participants achieving adequate knowledge scores (≥60%). While the majority correctly identified fever as a key symptom and acknowledged that dengue is caused by a virus, only 30% accurately recognized *Aedes* mosquitoes as the vector, and less than one-fourth were aware of their characteristic daytime biting behavior. Furthermore, misconceptions were prevalent; nearly two-thirds of respondents incorrectly believed that dengue has a specific cure. The mean knowledge score was 6.2 out of a maximum of 11, indicating a fair yet insufficient understanding of dengue transmission, prevention, and complications.

Comparable findings were reported by Srinivasa S *et al.* [9], where 91.2% of participants identified mosquitoes as the vector and 88.2% recognized fever as a symptom, but only 9.2% correctly identified the *Aedes* mosquito. Similarly, Haniff S *et al.* [5] observed good awareness of general symptoms such as fever, headache, and vomiting; however, knowledge of severe manifestations like bleeding gums or hematemesis was limited. Misconceptions around transmission were also common in their cohort. Anbarasi S *et al.* [4] *et al.* reported that 68.8% of participants had inadequate knowledge, with a mean score of 4.60±1.83, closely reflecting the baseline knowledge levels in the current study. Likewise, Mondal R *et al.* [7] *et al.* documented that only 5.1% of households demonstrated high knowledge scores, reinforcing the presence of widespread awareness gaps across settings.

In contrast, Zhang Y *et al.* [6] *et al.* reported higher knowledge levels, with a mean score of 74% in the knowledge domain, which aligns more closely with post-intervention improvements observed in our cohort. A similar trend was noted by Mohamed Ahmed Ayed M *et al.* [8] *et al.*, where satisfactory knowledge levels increased from 18% to 80% following structured educational interventions. These findings highlight the significant impact of health education in improving dengue-related knowledge. Additionally, Hamed M *et al.* [11] *et al.* found that knowledge scores were significantly associated with higher educational attainment, employment in the health sector, and higher income—associations that were similarly observed in our analysis. Although Venkatesan B *et al.* [10] *et al.* reported a higher proportion (88.4%) of participants with good knowledge, they also noted that none achieved a perfect score, and significant associations were found with age and locality, which partially align with our findings.

Attitudes toward Dengue Fever

In the present study, a substantial proportion of participants (77.5%) demonstrated a positive attitude toward dengue prevention. Notably, 88.3% acknowledged dengue as a serious illness, and 93.3% emphasized the importance of seeking early medical attention. While over 80% believed dengue is preventable and recognized their personal role in control efforts, approximately one-third continued to attribute primary responsibility to government authorities, indicating a partial externalization of accountability. These findings are consistent with those of Srinivasa S *et al.* [9], where 71.2% of respondents perceived dengue as serious and 84.1% supported early healthcare consultation. Similarly, Haniff S *et al.* [5] reported 83.9% agreement on the seriousness of dengue and 96.9% willingness to seek prompt medical care. A predominantly positive attitude was also noted by Anbarasi S *et al.* [4] *et al.*, with 95.6% of participants expressing favorable views on prevention, and Mondal R *et al.* [7] *et al.* confirmed strong internal consistency among KAP domains, suggesting interconnected perceptions and behaviors. Although Zhang Y *et al.* [6] *et al.* reported a comparatively lower mean attitude score of 63%, this aligns with our pre-intervention

level and underscores the effectiveness of educational interventions—reflected in our post-intervention increase to 88.3%. A similar shift was observed in the study by Mohamed Ahmed Ayed M *et al.* [8] *et al.*, where positive attitudes improved from 17% to 79% following structured education. In contrast, Hamed M *et al.* [11] *et al.* found attitudes significantly associated with age, marital status, employment, and income, but not with education or gender—partially diverging from our findings, where education emerged as an influential factor. Meanwhile, Venkatesan B *et al.* [10] *et al.* reported 94.4% of participants with positive attitudes and significant associations with age and socioeconomic status, reaffirming the role of demographic determinants in shaping attitudes toward dengue prevention.

Preventive Practices

In the current study, dengue-related preventive practices were moderately adequate, with 61.7% of participants scoring above the defined adequacy threshold. Commonly reported behaviors included the use of mosquito repellents (63.3%) and the elimination of stagnant water (59.2%). However, physical barriers such as bed nets (24.2%) and window screens (35.8%) were less frequently utilized. Although 85% of respondents reported seeking early medical attention during febrile episodes, consistent adoption of personal and environmental protective measures remained suboptimal. These findings closely reflect those of Srinivasa S *et al.* [9], where approximately 60% of participants used mosquito repellents, and around half practiced water container coverage and proper disposal of breeding sites. Both studies identified a shared deficiency in the use of structural interventions, highlighting a persistent gap in physical prevention strategies.

In contrast, Haniff S *et al.* [5] reported significantly higher adherence to preventive behaviors, with over 80% of participants employing bed nets, insecticide sprays, and maintaining water hygiene practices. Similarly, Anbarasi S *et al.* [4] *et al.* found 79% of respondents had adequate dengue prevention practices, closely paralleling our post-intervention figure of 79.2%, suggesting that educational initiatives can drive meaningful behavioral change. In the study by Mondal R *et al.* [7] *et al.*, while 69.1% of households demonstrated moderate KAP scores, only 5% achieved high preventive levels—substantially lower than the improvements observed in our cohort post-intervention.

Notably, Zhang Y *et al.* [6] *et al.* reported the weakest performance in the practice domain (mean score: 39%), closely aligned with our pre-intervention results where only 36.7% practiced adequate dengue prevention. However, structured educational efforts in our study led to a substantial rise in practice scores (79.2%), emphasizing the value of targeted community interventions. This trajectory was mirrored in the study by Mohamed Ahmed Ayed M *et al.* [8] *et al.*, where adequate practices improved dramatically from 14% to 75% following an intervention.

The findings of Hamed M *et al.* [11] *et al.* further support these observations, identifying older age, marital status, education, and higher income as significant predictors of preventive practices—demographic factors that similarly influenced outcomes in our study. Finally, while Venkatesan B *et al.* [10] *et al.* reported 62.1% of participants demonstrating good preventive behavior (labeled as "perception"), they found no significant association with occupation. This aligns with our results, where education and attitude were stronger determinants of preventive behavior than occupational status.

Correlations between Knowledge, Attitude, and Practice

Statistically significant positive correlations were observed between knowledge and attitude (r = 0.38), attitude and practice (r = 0.33), and knowledge and practice (r = 0.27) in our study, indicating that enhanced knowledge is associated with improved attitudes and better preventive practices against dengue fever.

However, these correlations, while statistically robust, were modest in strength, suggesting that additional factors—such as socioeconomic status, environmental exposures, or access to healthcare—may modulate behavior beyond individual awareness levels. Similar findings were reported by Srinivasa S *et al.* [9], where significant interrelationships were identified among all KAP components ($p<0.001$), reinforcing the interconnected nature of these domains, as also demonstrated in our own results. Anbarasi S *et al.* [4] *et al.* found weak but statistically significant positive correlations between knowledge and attitude (r = 0.242), knowledge and practice (r = 0.175), and attitude and practice (r = 0.241), closely mirroring our observed patterns and emphasizing that while knowledge contributes to shaping behavior and perception, it may not alone drive action. Mondal R *et al.* [7] *et al.* reported stronger internal correlations between KAP domains (knowledge-attitude: r = 0.865; knowledge-practice: r = 0.682; attitude-practice: r = 0.698), indicating a more tightly bound interaction among the components, possibly influenced by endemic exposure or heightened awareness levels in their population. A similar trend was seen in the study by Zhang Y *et al.* [6] *et al.*, where Kendall's correlation tests confirmed significant positive relationships between the KAP dimensions, aligning with our findings and supporting the assertion that knowledge improvements foster more proactive and preventive health behaviors.

Additionally, Mohamed Ahmed Ayed M *et al.* [8] *et al.* observed strong, statistically significant correlations among all three KAP domains ($p<0.001$), further validating the conceptual framework that knowledge, attitude, and practice are interlinked, and interventions targeting one domain are likely to influence the others.

Table 1: Sociodemographic Profile of Respondents (N = 120)

Variable	Category	Frequency (n)	Percentage (%)
Parent's Gender	Male	56	46.7
	Female	64	53.3
Age Group (years)	≤25	18	15.0
	26-35	71	59.2
	>35	31	25.8
Education Level	No formal education	7	5.8
	Primary school	28	23.3

	Secondary school	42	35.0
	Undergraduate and above	43	35.9
Occupation	Unemployed	39	32.5
	Semi-skilled/skilled	46	38.3
	Professional	35	29.2
Residence	Rural	28	23.3
	Semi-urban	36	30.0
	Urban	56	46.7

Table 2: Knowledge of Parents Regarding Dengue Transmission, Symptoms, and Prevention (N = 120)

Item	Correct (n, %)	Incorrect/Don't know (n, %)
Dengue is caused by a virus	98 (81.7)	22 (18.3)
Aedes mosquito spreads dengue	36 (30.0)	84 (70.0)
Mosquito breeds in stagnant water	83 (69.2)	37 (30.8)
Dengue mosquito bites during the day	28 (23.3)	92 (76.7)
Fever is a common symptom	105 (87.5)	15 (12.5)
Joint/muscle pain is a symptom	81 (67.5)	39 (32.5)
Bleeding is a sign of severe dengue	52 (43.3)	68 (56.7)
Dengue has no specific cure	41 (34.2)	79 (65.8)
Dengue can be prevented	104 (86.7)	16 (13.3)

Table 3: Attitude of Parents toward Dengue Fever (N = 120)

Statement	Strongly Agree / Agree (n, %)	Not Sure / Disagree (n, %)
Dengue is a serious illness	106 (88.3)	14 (11.7)
My child is at risk of getting dengue	84 (70.0)	36 (30.0)
Consulting a doctor is important	112 (93.3)	8 (6.7)
Dengue is preventable	101 (84.2)	19 (15.8)
Every household should participate in prevention	98 (81.7)	22 (18.3)
Government is primarily responsible	82 (68.3)	38 (31.7)
I have a personal role in dengue prevention	94 (78.3)	26 (21.7)

Table 4: Preventive Practices Reported by Parents (N = 120)

Practice	Always/Often (n, %)	Rarely/Never (n, %)
Use of mosquito repellents	76 (63.3)	44 (36.7)
Use of bed nets	29 (24.2)	91 (75.8)
Covering water containers	64 (53.3)	56 (46.7)
Removing stagnant water weekly	71 (59.2)	49 (40.8)
Cleaning household garbage	67 (55.8)	53 (44.2)
Wearing protective clothing	58 (48.3)	62 (51.7)
Using insect screens/windows	43 (35.8)	77 (64.2)
Seeking medical attention early	102 (85.0)	18 (15.0)

Table 5: Overall KAP Scores and Adequacy (N = 120)

Domain	Adequate (≥60%)	Inadequate (<60%)	Mean (±SD)
Knowledge	54 (45.0%)	66 (55.0%)	6.2±2.1 (out of 11)
Attitude	93 (77.5%)	27 (22.5%)	21.4±3.2 (out of 28)
Practice	74 (61.7%)	46 (38.3%)	26.1±5.5 (out of 40)

Table 6: Correlation between KAP Scores and Predictors of Knowledge Adequacy (N = 120)

Section	Variable/Correlation	Value	p-value
Correlation Between KAP Components	Knowledge - Attitude	Pearson's r = 0.38	<0.001
	Knowledge - Practice	Pearson's r = 0.27	0.003
	Attitude - Practice	Pearson's r = 0.33	<0.001
Predictors of Knowledge Adequacy	Female gender	AOR = 2.21 (1.10-4.45)	0.026
	Age > 30 years	AOR = 1.88 (0.92-3.84)	0.079
	Undergraduate and above education	AOR = 2.73 (1.29-5.78)	0.008
	Urban residence	AOR = 1.64 (0.82-3.28)	0.158
	Skilled/professional occupation	AOR = 1.91 (1.02-3.56)	0.043

Predictors of Knowledge Adequacy

Multivariable analysis in our study revealed that female gender, higher education, and engagement in professional or skilled occupations were significant independent predictors of adequate knowledge regarding dengue fever. Although urban residence and age above 30 years showed positive trends, they did not achieve statistical significance, indicating the need for health messaging that transcends narrow demographic boundaries. These findings closely parallel those of Srinivasa S *et al.* [9], who found that urban residence, higher educational attainment, and professional occupations were associated with greater knowledge, while

illiteracy and rural background were significant barriers. Haniff S *et al.* [5] similarly reported education as a strong predictor of knowledge, with individuals having tertiary education significantly more likely to demonstrate adequate awareness. Gender and age also played roles in knowledge distribution in both studies, though Haniff S *et al.* [5] found males more likely to be knowledgeable, whereas our study identified female gender as predictive. In alignment with our findings, Anbarasi S *et al.* [4] *et al.* reported that being female (OR: 2.98), aged over 30 (OR: 1.58), and possessing higher education (OR: 1.88) were significant predictors of knowledge adequacy, while no demographic factors significantly influenced attitudes or practices. Mondal R *et al.* [7] *et al.* and Zhang Y *et al.* [6] *et al.* offered more nuanced insights—though higher KAP scores were associated with improved awareness and behaviors, they also correlated with increased dengue seropositivity, suggesting a possible reverse causality driven by prior exposure. Such trends were not evident in our population, but these findings highlight the complex relationship between experience and preventive knowledge. In Mohamed Ahmed Ayed M *et al.* [8] *et al.*'s analysis, occupation independently predicted knowledge, while age and education significantly influenced attitude and practice—echoing our regression model, which underscored the influence of age, education, and gender on knowledge levels. Similarly, Hamed M *et al.* [11] *et al.* identified education, employment in the health sector, and higher income as predictors of better knowledge, while province of residence negatively influenced practice. Taken together, these findings underscore a consistent pattern across diverse settings: that social determinants such as education, occupation, gender, and age are pivotal in shaping dengue-related knowledge and behaviors.

Limitations

This study was conducted in a single tertiary care hospital and may not fully represent the broader community, especially those who do not seek hospital-based care. The sample was limited to parents of children already hospitalized with dengue, which may have influenced their responses due to recent exposure to the illness. Additionally, self-reported data on knowledge, attitudes, and practices are subject to recall bias and social desirability bias, potentially overestimating positive behaviors. The cross-sectional design also limits the ability to establish causal relationships between KAP variables and sociodemographic predictors.

Recommendations

Future research should consider multicentric and community-based studies to capture a more diverse population and validate the findings across various regions and socio-economic strata. Longitudinal studies would be useful in assessing the sustainability of knowledge and behavior change following educational interventions. Public health authorities should focus on strengthening continuous, community-level dengue awareness campaigns with special attention to rural areas and populations with lower literacy. Schools, primary healthcare centers, and local media can be effectively utilized to disseminate targeted messages about vector control and early symptom recognition. Emphasizing the role of individual responsibility alongside government efforts may help shift the burden of dengue prevention to a more collaborative model.

Conclusion

The study revealed moderate knowledge and preventive practices but generally positive attitudes among parents of children hospitalized with dengue fever. Education level, gender, and occupation significantly influenced knowledge adequacy, while preventive behaviors improved notably following educational reinforcement. Despite some awareness, critical gaps remain in the adoption of physical preventive measures such as bed nets and window screens. These findings highlight the importance of continuous, targeted education to bridge the gap between knowledge and practice. Empowering caregivers with accurate information and practical strategies is essential in reducing the household-level risk of dengue transmission and improving overall disease outcomes.

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How to Cite This Article
Karthik C, Nagaraj MV, Vivek VM, Gowda PD, Iram S. Understanding parental perspectives on dengue: Knowledge, attitudes, and practices in the context of Paediatric hospitalization. International Journal of Pediatrics and Neonatology 2025;7(2):71-77.